

**ARTICLE 5-A**  
**NATURAL RESOURCES PROTECTION ACT**

§480-GG. **High and moderate value inland waterfowl and wading bird habitat and excavations and quarries authorized pursuant to article 6, 7 or 8-A.**

**1. Excavation authorized before June 8, 2006.** Unless a permit is required due to the presence of a protected natural resource other than a high and moderate value inland waterfowl and wading bird habitat, an excavation or quarry that was authorized pursuant to article 6, 7 or 8-A before June 8, 2006 is not required to obtain a permit pursuant to this article for excavation within the upland portion of a high and moderate value inland waterfowl and wading bird habitat.

If a permit is required pursuant to this article due to the presence of a protected natural resource other than a high and moderate value inland waterfowl and wading bird habitat, an excavation or quarry that was authorized pursuant to article 6, 7 or 8-A before June 8, 2006 is not required to meet standards associated solely with the upland portion of a high and moderate value inland waterfowl and wading bird habitat.

**2. Permits not authorized.** The department may not issue a permit pursuant to this article for an excavation or quarry authorized pursuant to article 6, 7 or 8-A and located in, on or over the wetland portion of a high and moderate value inland waterfowl and wading bird habitat.

The department may not issue a permit pursuant to this article for an excavation or quarry requiring authorization pursuant to article 6, 7 or 8-A after June 8, 2006 and located in the upland portion of a high and moderate value waterfowl and wading bird habitat.

## **ARTICLE 8-A**

### **PERFORMANCE STANDARDS FOR QUARRIES**

#### **§490-W. Definitions**

As used in this article, unless the context otherwise indicates, the following terms have the following meanings.

**1. Affected land.** "Affected land" means all reclaimed and unreclaimed land, land that has or will have the overburden removed, land on which stumps, spoil or other solid waste has or will be deposited and storage areas or other land, except natural buffer strips, that will be or has been used in connection with a quarry.

**2. Airblast.** "Airblast" means an atmospheric compression wave resulting from the detonation of explosives, whether resulting from the motion of blasted materials or the expansion of gases from the explosion.

**3. Blaster.** "Blaster" means a person qualified to be in charge of or responsible for the loading and firing of a blast.

**4. Blasting.** "Blasting" means the use of explosives to break up or otherwise aid in the extraction or removal of a rock or other consolidated natural formation.

**5. Blast site.** "Blast site" means the area where explosive material is handled during the loading of drilled blastholes, including the perimeter formed by the loaded blastholes and 50 feet in all directions from loaded blastholes.

**6. Detonating cord.** "Detonating cord" means a flexible cord containing a center core of high explosives that may be used to initiate other explosives.

**7. Explosive.** "Explosive" means any chemical compound or other chemical substance that contains oxidizing or combustible materials used for the purpose of producing an explosion intended to break or move rock, earth or other materials.

**8. Flyrock.** "Flyrock" means rock that is propelled through the air or across the ground as a result of blasting and that leaves the blast area.

**9. Matting.** "Matting" means a covering placed over load holes and adjacent areas in order to minimize generation of flyrock and limit airblast effects.

**10. Natural buffer strip.** "Natural buffer strip" means an undisturbed area or belt of land that is covered with trees or other vegetation.

**11. Passenger car equivalents at peak hour.** "Passenger car equivalents at peak hour" means the number of passenger cars, or, in the case of nonpassenger vehicles, the number of passenger cars that would be displaced by nonpassenger vehicles, that pass through an intersection or on a roadway under prevailing roadway and traffic conditions at that hour of the day during which traffic volume generated by the development is higher than the volume during any other hour of the day. For purpose of this article, one tractor-trailer combination is the equivalent of 2 passenger cars.

**12. Peak particle velocity.** "Peak particle velocity" means the maximum rate of ground movement measured by any of the 3 mutually perpendicular components of ground motion.

**13. Preblast survey.** "Preblast survey" means documentation, prior to the initiation of blasting, of the condition of buildings, structures, wells or other infrastructures; protected natural resources; historic sites; and unusual natural areas.

**14. Private drinking water supply.** "Private drinking water supply" means a surface water supply, a dug well, a spring or a hole drilled, driven or bored into the earth that is used to extract drinking water for human consumption and that is not part of a public drinking water supply.

**15. Production blasting.** "Production blasting" means blasting conducted for the purpose of extracting or removing natural materials for commercial sale or beneficiation.

**16. Public drinking water source.** "Public drinking water source " means a groundwater well or a surface water source that directly or indirectly serves a water distribution system that has at least 15 service connections or regularly services an average of at least 25 individuals daily at least 60 days of the year.

**17. Quarry.** "Quarry" means a place where rock is excavated.

**18. Reclamation.** "Reclamation" means the rehabilitation of the area of land affected by mining, including, but not limited to, the stabilization of slopes and creation of safety benches, the planting of forests, the seeding of grasses and legumes for grazing purposes, the planting of crops for harvest, the enhancement of wildlife and aquatic habitat and aquatic resources and the development of the site for residential, commercial, recreational or industrial use. "Reclamation" does not include the filling in of pits and the filling or sealing of shafts and underground workings with solid materials unless necessary for the protection of groundwater or for reasons of safety.

**19. Regulator.** "Regulator" means:

A. For a quarry located wholly within a municipality that is registered under section 490-DD to enforce this article, the municipality; and

B. For all other quarries, the Department of Environmental Protection.

**20. Rock.** "Rock" means a hard, nonmetallic material that requires cutting, blasting or similar methods of forced extraction.

**21. Stemming.** "Stemming" means inert material used in a blasthole to confine the gaseous products of detonation.

**22. Surface blasting.** "Surface blasting" means any blasting for which the blast area lies at the surface of the ground.

**23. Underground production blasting.** "Underground production blasting" means a blasting operation carried out beneath the surface of the ground by means of shafts, declines, adits or other openings leading to the natural material being mined or extracted.

#### **§490-X. Applicability**

**Sec. 8. 38 MRSA §490-X, first ¶,** as enacted by PL 1995, c. 700, §35, is amended to read:

This article applies to any quarry, including reclaimed and unreclaimed areas, if the quarry is more than one acre in size, the total excavated area including adjacent parcels under a common owner or operator is more than one acre in size or underground production blasting is proposed.

The article does not apply to a quarry located wholly within the jurisdiction of the Maine Land Use Regulation Commission.

This article does not apply to an excavation or grading preliminary to a construction project, unless intended to circumvent this article.

A person with a valid permit for a quarry under article 6 must operate that quarry in compliance with the terms and conditions of that permit. Any modification of the permit must be in conformance with section 484. A person with a permit under article 6 may file a notice of intent to comply with this article. The permit issued under article 6 lapses as of the date a complete notice of intent is filed with the department. If the permittee chooses to substitute a notification pursuant to this article, all terms and conditions that applied to the permit issued pursuant to article 6 are incorporated into the notification approved pursuant to this article.

#### **§490-Y. Notice of intent to comply**

Except as provided in section 484-A, a person intending to create or operate a quarry under this article must file a notice of intent to comply before the total area of excavation of rock or overburden on the parcel exceeds one acre. Both reclaimed and unreclaimed areas are added together in determining whether this one-acre threshold is exceeded. A notice filed under this section must be complete, submitted on forms approved by the department and mailed to the municipality where the quarry is located, the department, the Maine Historic Preservation Commission and each abutting property owner. The notice that is mailed to the municipality and

each abutting property owner must be sent by certified mail at least 7 days before the notice of intent to comply is filed with the regulator. The notice that is mailed to the department must be sent by certified mail, return receipt requested. Upon receiving the postal receipt, the owner or operator may commence operation of the quarry. The municipality where the proposed quarry is located may submit comments to the department if the proposed quarry may pose an unreasonable adverse impact under the standards in section 490-Z. Within 30 days of receipt of the notice of intent to comply, the department shall respond to the comments made by the municipality. Abutting property owners, the Maine Historic Preservation Commission or other interested persons may submit comments directly to the department.

A notice of intent to comply is not complete unless it includes the following:

**1. Name, address and telephone number.** The name, mailing address and telephone number of the owner of the quarry and, if different from the owner, the operator of the quarry;

**2. Map and site plan.** A location map and site plan drawn to scale showing property boundaries, stockpile areas, existing reclaimed and unreclaimed lands, proposed maximum acreage of all affected lands, all applicable private drinking water supplies or public drinking water sources and all existing or proposed solid waste disposal areas;

**3. Parcel description.** A description of the parcel including size and deed description;

**4. Legal interest.** A copy of the lease or other document showing that an operator who is not the owner has a legal right to excavate on the property. Stumpage information does not have to be shown;

**5. Information on abutters.** The names and addresses of abutting property owners;

**6. Signed statement.** A statement signed and dated by the owner or operator certifying that the quarry will be operated in compliance with this article; and

**7. Fees.** A fee paid to the department as provided by section 490-EE.

If the department determines that a notice filed under this section is not complete, the department must notify the owner or operator no later than 45 days after receiving the notice.

#### **§490-Z. Performance standards for quarries**

**1. Significant wildlife habitat and other protected areas.** Affected land may not be located in , on or over a significant wildlife habitat or other type of protected natural resource, as defined in section 480-B, or in an area listed pursuant to the Natural Areas Program, Title 12, section 544. The department may allow excavation to occur in , on or over a significant wildlife habitat or other type of protected natural resource provided a permit is obtained pursuant to article 5-A. Permit requirement for certain excavations in, on or over high and moderate value inland waterfowl and wading bird habitat are also governed by section 480-GG.

**2. Solid waste.** Solid waste, including stumps, wood waste and land-clearing debris generated on the affected land must be disposed of in accordance with chapter 13, including any rules adopted to implement those laws. The department may not grant a variance from the provisions of this subsection.

**3. Groundwater protection.** To ensure adequate groundwater protection, the following setback requirements must be met.

A. A 200-foot separation must be maintained between an excavation and a private drinking water supply that is point driven or dug and was in existence prior to the excavation.

B. A 100-foot separation must be maintained between an excavation and a private drinking water supply that is drilled into saturated bedrock and was in existence prior to the excavation.

C. Separation must be maintained between an excavation and a public drinking water source as follows:

(1) For systems serving a population of 500 persons or less, the minimum separation must be 300 feet;

(2) For systems serving a population of 501 persons up to 1,000 persons, the separation must be 500 feet;

(3) For systems serving a population of more than 1,000 persons, the separation must be 1,000 feet; and

(4) For any system that holds a valid filtration waiver in accordance with the federal Safe Drinking Water Act, 42 United States Code, Sections 300f to 300j-26 (1988), the separation must be 1,000 feet.

D. Refueling operations, oil changes, other maintenance activities requiring the handling of fuels, petroleum products and hydraulic fluids and other on-site activity involving storage or use of products that, if spilled, may contaminate groundwater, must be conducted in accordance with the department's spill prevention, control and countermeasures plan. Petroleum products and other substances that may contaminate groundwater must be stored and handled over impervious surfaces that are designed to contain spills. The spill prevention, control and countermeasures plan must be posted at the site.

E. In the event of excavation below the seasonal high water table, a 300-foot separation must be maintained between the limit of excavation and any predevelopment private drinking water supply and a 1000-foot separation must be maintained between the limit of excavation and any public drinking water source or area previously designated for potential use as a public drinking water source by a municipality or private water company.

The department may grant a variance from the provisions of paragraph C upon consultation with the persons or entity that controls the public drinking water supply affected by the excavation. The department may not grant a waiver from the provisions of paragraph A, B or D.

Excavation below the seasonal highwater table is prohibited. The department may grant a variance allowing excavation below the seasonal highwater table if the applicant demonstrates that the yield of groundwater flow to protected waters or wetlands or public drinking water sources or private drinking water supplies will not be adversely affected by the excavation.

In the event of excavation below the seasonal highwater table, the operator of a mining activity that affects by excavation activities a public drinking water source or private drinking water supply by contamination, interruption or diminution must restore or replace the affected water supply with an alternate source of water, adequate in quantity and quality for the purpose served by the supply. This provision is not intended to replace any independent action that a person may have whose water supply is affected by a mining activity.

**4. Natural buffer strip.** Existing vegetation within a natural buffer strip may not be removed. If vegetation within the natural buffer strip has been removed or disturbed by the excavation or activities related to operation of a quarry before submission of a notice of intent to comply, that vegetation must be reestablished as soon as practicable after filing the notice of intent to comply. The department may not grant a variance from the provisions of this subsection.

**5. Protected natural resources.** A natural buffer strip must be maintained between the working edge of an excavation and a river, stream, brook, great pond or coastal wetland as defined in section 480-B. A natural buffer strip must also be maintained between the working edge of an excavation and certain freshwater wetlands as defined in section 480-B and having the characteristics listed in paragraph B. Excavation activities conducted within 100 feet of a protected natural resource must comply with the applicable permit requirements under article 5-A. The width requirements for natural buffer strips are as follows.

A. A natural buffer strip at least 100 feet wide must be maintained between the working edge of the excavation and the normal high water line of a great pond classified as GPA or , a river flowing to a great pond classified as GPA or a segment of the Kennebec River identified in Title 12, section 403, subsection 7.

B. A natural buffer strip at least 75 feet wide must be maintained between the working edge of the excavation and a body of water other than as described in paragraph A, a river, stream or brook, coastal wetland or significant wildlife habitat contained within a freshwater wetland consisting of or containing:

(1) Under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, except for artificial ponds or impoundments; or

(2) Peat lands dominated by shrubs, sedges and sphagnum moss.

For purposes of this subsection, the width of a natural buffer strip is measured from the upland edge of a floodplain wetland. If no floodplain wetlands are present, the width is measured from the normal ~~high-water~~ high-water mark of the river, stream or brook. The width is measured from the normal ~~high-water~~ high-water mark of a great pond and upland edge of a freshwater or coastal wetland. The department may ~~not grant a variance from~~ allow excavation to occur under this subsection as long as a permit is obtained pursuant to article 5-A. A quarry is not eligible for a permit by rule under department rules regarding activities adjacent to a protected natural resource.

**6. Roads.** A natural buffer strip must be maintained between the working edge of an excavation and a road or right-of-way as follows.

A. A natural buffer strip at least 150 feet wide must be maintained between the working edge of an excavation and a road designated as a scenic highway by the Department of Transportation.

B. A natural buffer strip at least 100 feet wide must be maintained between the working edge of the excavation and any other public road. A natural buffer strip at least 50 feet wide must be maintained between the working edge of an excavation and any public right-of-way that does not contain a road. The width of a natural buffer strip adjacent to a public road or right-of-way may be reduced if there is a public entity or entities with authority to grant permission and the applicant receives permission from each authority in writing.

C. A natural buffer strip at least 50 feet wide must be maintained between the working edge of an excavation and a private road or a right-of-way. If a private road is contained within a wider right-of-way, the buffer is measured from the edge of the right-of-way. The width of the natural buffer strip adjacent to a private road may be reduced if the applicant receives written permission from the persons having a right-of-way over the private road.

The department may not grant a variance from the provisions of paragraph A or C. The department may grant a variance from paragraph B if the variance does not result in the natural buffer strip being reduced to less than 50 feet between the working edge of the excavation and any road or right-of-way, whichever is farther from the excavation, and if the owner or operator installs visual screening and safety measures as required by the department.

A distance specified in this subsection is measured from the outside edge of the shoulder of the road or edge of the right-of-way unless otherwise specifically provided.

**7. Property boundary.** A natural buffer strip at least 100 feet wide must be maintained between an excavation and any property boundary. This distance may be reduced to 10 feet with the written permission of the affected abutting property owner or owners, except that the distance may not be reduced to less than 25 feet from the boundary of a cemetery or burial ground. The natural buffer strip between quarries owned by abutting owners may be eliminated with the abutter's written permission if the elimination of this natural buffer strip does not

increase the runoff from either excavation across the property boundary. Any permission to reduce a buffer must provide that it remains in effect until mining ceases and must be recorded in the registry of deeds. All property boundaries must be identified in the field by markings such as metal posts, stakes, flagging or blazed trees. The department may not grant a variance from the provisions of this subsection.

**8. Erosion and sedimentation control.** All reclaimed and unreclaimed areas, except for access roads, must be naturally internally drained at all times unless a variance is obtained from the department. Stockpiles consisting of topsoil to be used for reclamation must be seeded, mulched or otherwise temporarily stabilized.

A. Sediment may not leave the parcel or enter a protected natural resource.

B. Grubbed areas not internally drained must be stabilized.

C. Erosion and sedimentation control for access roads must be conducted in accordance with the department's best management practices for erosion and sedimentation control. Areas for access roads that are not naturally internally drained must meet the standards of section 420-C.

The department may not grant a variance from the provisions of paragraph A, B or C. Areas are not considered “naturally internally drained” if surface discharge is impeded through the use of structures such as detention ponds, retention ponds and undersized culverts.

**9. Water quality protection and storm water management.** Standards of the laws governing storm water management and waste discharge must be met as provided in this subsection.

A. A variance must be obtained and storm water standards adopted pursuant to section 420-D must be met for any part of a project, other than the working pit area, that is not naturally internally drained if that part of the project would require a storm water management permit pursuant to section 420-D but for the exception for certain excavations in section 420-D, subsection 5. A storm water management permit pursuant to section 420-D is not required.

B. A waste discharge must meet standards and obtain authorization if required pursuant to section 413.

**10. Traffic.** The following provisions govern traffic.

A. Entrances and exits of the quarry must be located, posted and constructed in accordance with standards for roadways in rules adopted by the board. Adequate distances for entering, exiting and stopping must be maintained in accordance with these standards. The department may not grant a variance from the provisions of this subsection. This paragraph is repealed July 1, 1997.

B. Any excavation activity that generates 100 or more passenger car equivalents at peak hour must comply with the applicable permit requirements under article 6. This paragraph takes effect July 1, 1997.

**11. Noise.** Noise levels may not exceed applicable noise limits in rules adopted by the board.

**12. Dust.** Dust generated by activities at a quarry, including dust associated with traffic to and from a quarry, must be controlled by sweeping, paving, watering or other best management practices for control of fugitive emissions. Dust control methods may include calcium chloride as long as the manufacturer's labeling guidelines are followed. The department may not grant a variance from the provisions of this subsection. Visible emissions from a fugitive emission source may not exceed an opacity of 20% for more than 5 minutes in any one-hour period.

**13. Reclamation.** The affected land must be restored to a condition that is similar to or compatible with the conditions that existed before excavation. Reclamation may be conducted in accordance with the department's best management practices for erosion and sedimentation control and must include the following.

A. Highwalls, or quarry faces, must be treated in such a manner as to leave them in a condition that minimizes the possibility of rock falls, slope failures and collapse. A highwall that is loose must be controlled by the use of blasting or scaling, the use of safety benches, the use of flatter slopes or reduced face heights or the use of benching near the top of the face or rounding the edge of the face.

B. A vegetative cover must be established by seeding or planting within one year of the completion of excavation. Vegetative cover must be established on all affected land, except for quarry walls and flooded areas. A vegetative cover must be established on safety benches, unless otherwise approved by the Department. Topsoil must be placed, seeded and mulched within 30 days of final grading. Vegetative cover is acceptable if within one year of seeding:

(1) The planting of trees and shrubs results in a permanent stand or a stand capable of regeneration and succession sufficient to ensure a 75% survival rate; and

(2) The planting of all material results in permanent 90% ground cover.

Vegetative cover used in reclamation must consist of grasses, legumes, herbaceous or woody plants, shrubs, trees or a mixture of these.

C. All structures, once no longer in use, and all access roads, haul roads and other support roads must be reclaimed.

D. All affected lands must be reclaimed within 2 years after final grading.

E. Topsoil that is stripped or removed must be stockpiled for use in reclaiming disturbed land areas. The department may grant a variance from this paragraph if the applicant demonstrates that the soil is not needed for reclamation purposes.

F. The department may require a bond payable to the State with sureties satisfactory to the department or such other security as the department determines adequately secures compliance with this article, conditioned upon the faithful performance of the requirements set forth in this article. Other security may include a security deposit with the State, an escrow account and agreement, insurance or an irrevocable trust. In determining the amount of the bond or the security, the department shall take into consideration the character and nature of the overburden, the future suitable use of the land involved and the cost of grading and reclamation required. All proceeds of forfeited bonds or other security must be expended by the department for the reclamation of the area for which the bond was posted and any remainder returned to the operator.

G. The board may adopt or amend rules to carry out this subsection, including rules relating to operational or maintenance plans; standards for determining the reclamation period; annual revisions of those plans; limits, terms and conditions on bonds or other security; proof of financial responsibility of a person engaged in excavation activity or the affiliated person who guarantees performance; estimation of reclamation costs; reports on reclamation activities; and the manner of determining when the bond or other security may be discharged.

**14. Blasting.** The applicant must ensure that the blasting is conducted in accordance with Title 25, Chapter 318.

A. The owner or operator shall use sufficient stemming, matting or natural protective cover to prevent flyrock from leaving property owned or under control of the owner or operator or from entering protected natural resources or natural buffer strips. Crushed rock or other suitable material must be used for stemming when available; native gravel, drill cuttings or other material may be used for stemming only if no other suitable material is available.

B. The maximum allowable airblast at any inhabited building not owned or controlled by the developer may not exceed 129 decibels peak when measured by an instrument having a flat response (+ or - 3 decibels) over the range of 5 to 200 hertz.

C. The maximum allowable airblast at an uninhabited building not owned or controlled by the developer may not exceed 140 decibels peak when measured by an instrument having a flat response (+ or - 3 decibels) over the range of 5 to 200 hertz.

D. Monitoring of airblast levels is required in all cases for which a preblast survey is required by paragraph F. The department may waive the monitoring requirement if the owner or operator secures the permission of affected property owners to increase allowable airblast levels on their property and the department determines that no protected natural resource will be adversely affected by the increased airblast levels.

E. If a blast is to be initiated by detonating cord, the detonating cord must be covered by crushed rock or other suitable cover to reduce noise and concussion effects.

F. A preblast survey is required for all production blasting and must extend a minimum radius of ½ mile from the blast site. The preblast survey must document any preexisting damage to structures and buildings and any other physical features within the survey radius that could reasonably be affected by blasting. Assessment of features such as pipes, cables, transmission lines and wells and other water supply systems must be limited to surface conditions and other readily available data, such as well yield and water quality. The preblast survey must be conducted prior to the initiation of blasting at the operation. The owner or operator shall retain a copy of all preblast surveys for at least one year from the date of the last blast on the development site.

(1) The owner or operator is not required to conduct a preblast survey if the department determines that no protected natural resource within the limits of the otherwise required survey is likely to be affected by blasting and production blasting will not occur within 2000 feet of any building not owned or under the control of the developer.

(2) The owner or operator is not required to conduct a preblast survey on properties for which the owner or operator documents the rejection of an offer by registered letter, return receipt requested, to conduct a preblast survey. Any person owning a building within a preblast survey radius may voluntarily waive the right to a survey.

(3) The owner or operator is not required to conduct a preblast survey if the owner or operator agrees to design all blasts so that the weight of explosives per eight millisecond or greater delay does not exceed that determined by the equation  $W=(D/D_s)^2$ , where W is the maximum allowable weight of explosives per delay of 8 milliseconds or greater, D is the shortest distance between any area to be blasted and any inhabitable structure not owned or controlled by the developer and  $D_s$  equals 70 ft./lb.)<sup>1/2</sup>.

G. Blasting may not occur in the period between sundown and sunrise the following day or in the period 7:00 p.m. and 7:00 a.m., whichever is greater. Routine production blasting is not allowed in the daytime on Sunday. Detonation of misfires may occur outside of these times but must be reported to the department within 5 business days of the misfire detonation. Blasting may not occur more frequently than 4 times per day. Underground production blasting may be exempted from these requirements provided that a waiver is granted by the department.

H. Sound from blasting may not exceed the following limits at any protected location:

Number of Blast Per Day	Sound Level Limit
1	129 dbl
2	126 dbl
3	124 dbl
4	123 dbl

I. The maximum peak particle velocity at inhabitable structures not owned or controlled by the developer may not exceed the levels established in Table 1 in paragraph K and the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1. The department may grant a variance to allow ground vibration levels greater than 2 inches per second on undeveloped property not owned or controlled by the applicant if the department determines that no protected natural resource, unusual natural area or historic site will be adversely affected by the increased ground vibration levels. If inhabitable structures are constructed on the property after approval of the development and prior to completion of blasting, the developer immediately must notify the department and modify blasting procedures to remain in compliance with the standards of this subsection.

J. Based upon an approved engineering study, the department may grant a variance to allow higher vibration levels for certain buildings and infrastructures. In reviewing a variance application, the department shall take into account that the standards in this paragraph and paragraph I are designed to protect conventional low-rise structures such as churches, homes and schools. In cases of practical difficulty, the department may grant a variance from paragraph I if it can be demonstrated that no adverse impacts on existing infrastructures or protected natural resources, unusual natural areas or historic sites will result.

K. Table 1 of this paragraph or the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 must be used to evaluate ground vibration effects for those blasts for which a preblast survey is required.

(1) Either Table 1 of this paragraph or graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 may be used to evaluate ground vibration effects when blasting is to be monitored by seismic instrumentation.

(2) Blasting measured in accordance with Table 1 of this paragraph must be conducted so that the peak particle velocity of any one of the 3 mutually perpendicular components of motion does not exceed the ground vibration limits at the distances specified in Table 1 of this paragraph.

(3) Seismic instruments that monitor blasting in accordance with Table 1 of this paragraph must have the instrument's transducer firmly coupled to the ground.

(4) An owner or operator using Table 1 of this paragraph must use the scaled-distance equation,  $W=(D/D_s)^2$ , to determine the allowable charge weight of explosives to be detonated in any 8 millisecond or greater delay period without seismic monitoring, where W is equal to the maximum weight of explosives, in pounds, and D and  $D_s$  are defined as in Table 1 of this paragraph. The department may authorize use of a modified scaled-distance factor for production blasting if the owner or operator can demonstrate to a 95% confidence level, based upon records of seismographic monitoring at the specific site of the mining activity covered by the permit, that use of the modified scaled-distance factor will not cause the ground vibration to exceed the maximum allowable peak particle velocities of Table 1 of this paragraph.

(5) Blasting monitored in accordance with the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 must be conducted so that the continuously variable particle velocity criteria are not exceeded.

The owner or operator may apply for a variance of the ground vibration monitoring requirement prior to conducting blasting at the development site if the owner or operator agrees to design all blasts so that the weight of explosives per 8 millisecond or greater delay does not exceed that determined by the equation  $W=(D/D_s)^2$ , where W is the maximum allowable weight of explosives per delay of 8 milliseconds or greater, D is the shortest distance between any area to be blasted and any inhabitable structure not owned or controlled by the developer and  $D_s$  equals 70 ft./lb.<sup>1/2</sup>. As a condition of the variance, the department may require submission of records certified as accurate by the blaster and may require the owner or operator to document compliance with the conditions of this paragraph.

The following is Table 1.

#### Distance versus Peak Particle Velocity Method

Distance (D) from the blast area (feet)	Maximum allowable peak particle velocity (V <sub>max</sub> ) for ground vibration (in./sec.)	Scaled-distance factor ( $D_s$ ) to be applied without seismic monitoring
0 to 300	1.25	50
301-5000	1.00	55
Greater than 5000	0.75	65

L. A record of each blast, including seismographic data, must be kept for at least one year from the date of the last blast, must be available for inspection at the development or at the offices of the owner or operator if the development has been closed, completed or abandoned before the one-year limit has passed and must contain at a minimum the following data:

- (1) Name of blasting company or blasting contractor;
- (2) Location, date and time of blast;
- (3) Name, signature and social security number of blaster;
- (4) Type of material blasted;
- (5) Number and spacing of holes and depth of burden or stemming;
- (6) Diameter and depth of holes;
- (7) Type of explosives used;
- (8) Total amount of explosives used;
- (9) Maximum amount of explosives used per delay period of 8 milliseconds or greater;
- (10) Maximum number of holes per delay period of 8 milliseconds or greater;
- (11) Method of firing and type of circuit;
- (12) Direction and distance in feet to the nearest dwelling, public building, school, church or commercial or institutional building neither owned nor controlled by the developer;
- (13) Weather conditions, including such factors as wind direction and cloud cover;
- (14) Height or length of stemming;
- (15) Amount of mats or other protection used;
- (16) Type of detonators used and delay periods used;
- (17) The exact location of each seismograph and the distance of each seismograph from the blast;
- (18) Seismographic readings;
- (19) Name and signature of the person operating each seismograph; and
- (20) Names of the person and the firm analyzing the seismographic data.

M. All field seismographs must record the full analog wave form of each of the 3 mutually perpendicular components of motion in terms of particle velocity. All seismographs must be

capable of sensor check and must be calibrated according to the manufacturer's recommendations.

N. If any blasting activity exceeds the standards in this subsection, the department must be notified within 48 hours of the blast event. Notification must include the name of the blasting operator, the location, date and time of the blasting event and a description of the specific occurrence that is in noncompliance with this subsection. Use of explosives at the quarry may be suspended by the department until the cause of the noncompliance is identified and appropriate steps are implemented to reduce, prevent or eliminate reoccurrence.

O. Prior to blasting, the owner or operator shall develop and implement a plan that provides an opportunity for prior notification of a planned blast for all persons located within 1,000 feet of the blast site. Notification may be by telephone, in writing, by public notice in a newspaper of general circulation in the area affected or by other means identified in the plan. The plan must be in writing and available for inspection by the department

**15. Lighting.** Lighting must be shielded from adjacent highways and residential areas.

### **§490-AA. Inspections**

The department may periodically inspect a site, examine relevant records of the owner or operator of a quarry, take samples and perform tests necessary to determine compliance with the provisions of this article.

### **§490-BB. Enforcement and penalties**

The department shall administer and enforce the provisions of this article.

**1. Stop-work order.** The department may order the owner or operator of a quarry that is not operating in compliance with this article to cease operations until the noncompliance is corrected.

**2. Penalty.** A person who violates a provision of this article commits a civil violation and is subject to the penalties established under section 349. Penalties assessed for enforcement actions taken by the State are payable to the State.

**3. Reclamation.** If, after an opportunity for a hearing, the commissioner determines that the owner of an excavation site or the person who was engaged in the excavation activity at the excavation site has violated this article, the commissioner shall direct the department staff or contractors under the supervision of the commissioner to enter on the property and carry out the necessary reclamation. The person engaged in mining or any affiliated person who guarantees performance at the excavation site is liable for the reasonable expenses of this necessary reclamation. The commissioner may use the bond or other security paid under section 490-Z, subsection 13, paragraph F to meet the reasonable expenses of reclamation.

### **§490-CC. Variances**

An owner or operator must comply with the performance standards in section 490-Z unless a variance from those performance standards is approved by the department. Except when prohibited by section 490-Z, the department may grant a variance from the performance standards in this article if the owner or operator affirmatively demonstrates to the department that the variance does not adversely affect natural resources or existing uses and does not adversely affect the health, safety and general welfare of the public. A variance application must include any fee applicable under section 490-EE. The department shall process the variance application according to chapter 2 and the rules adopted by the department for processing an application. An applicant for a variance under this article shall hold a public informational meeting as described in those rules.

The department shall publish a timetable for responding to variance applications in the same manner prescribed in section 344-B. A variance is not valid unless approved by the department and, if a municipality is the regulator, the municipality. In making its decision on a variance application, the department shall consider comments or information received and the compliance

record of the owner or operator. The department shall inform the owner or operator of any significant concerns or issues raised.

#### **§ 490-DD. Municipal enforcement; registration**

A municipality may register for authority to enforce this article by adopting and submitting to the commissioner an ordinance that meets or exceeds the provisions of this article. The commissioner shall review that ordinance to determine whether that ordinance meets the provisions of this article and if the municipality has adequate resources to enforce the provisions of this article. If the commissioner determines that the ordinance meets the provisions of this article and that the municipality has the resources to enforce this article, the commissioner shall register that municipality for authority to enforce this article. Immediately upon approval by the commissioner, primary enforcement authority for this article vests in that municipality. The commissioner may not approve an ordinance under this section unless the ordinance requires that any request for a variance from the standards in the article be approved by the commissioner before the variance is valid.

**1. Relation to home rule.** This section may not be construed to limit a municipality's authority under home rule to adopt ordinances regulating quarries.

**2. Optional participation.** This article may not be construed to require a municipality to adopt any ordinance.

**3. Suspension of approval.** The commissioner may act to enforce any provision of this article or suspend the registration of a municipality if the commissioner determines that a municipal ordinance no longer conforms to the provisions of this article or that the municipality is not adequately enforcing this article. The commissioner shall notify a municipality of any such determination in writing. Suspension of municipal registration by the commissioner does not void or in any way affect a municipal ordinance or in any way limit the municipality's authority to enforce the provisions of its ordinance.

**4. Appeal.** A municipality may appeal to the board any decision of the commissioner under this section. Any decision by the board on appeal by a municipality constitutes final agency action.

#### **§ 490-EE. Transfer of ownership or operation, review before expansion; fees**

**1. Review before expansion.** Before expanding a quarry beyond an area that exceeds a total of 10 acres of reclaimed and unreclaimed land and before each additional 10-acre expansion, the owner or operator shall notify the regulator of the owner's or operator's intent to expand and must request an inspection. In the same manner as prescribed in section 344-B, the department shall publish a timetable for responding to inspection requests and shall inspect the site within that time period to determine the quarry's compliance with this article and other applicable laws administered by the department. The department may defer an inspection for a reasonable period when winter conditions at the site prevent the department from evaluating an

expansion request. The department shall notify the owner or operator of a deferral under this section. Excavation activities may continue after the filing of a notice of an intent to expand. The failure of a regulator to conduct a site visit within a published time period is not a sufficient basis for a stop-work order under section 490-BB, subsection 1.

At the time of filing a notification of intent to expand, the owner or operator shall pay any fee required by this section.

**2. Transfer of ownership or operation.** A person who purchases a quarry that is operated under a notice of intent to comply, as established under section 490-Y, or who obtains operating authority of a quarry that operates under a notice of intent to comply must file within 2 weeks after the purchase or the obtaining of operating authority a notice of intent to comply on a form developed by the department. The new owner or operator may operate the quarry during this 2-week period without having filed a notice of intent to comply if the new owner or operator complies with all standards of this article.

**3. Fees.** The owner or operator a quarry shall pay the regulator:

A. An initial fee of \$250 upon filing a notice of intent to comply under section 490-Y;

B. By March 1st of each year, an annual fee of:

(1) Four hundred dollars for an excavation from which 2,500 cubic yards or more of material will be extracted during that year; and

(2) One hundred dollars for all other excavations. To be eligible for the annual fee under this paragraph, the owner or operator must include with the payment of this fee a signed statement certifying that less than 2,500 cubic yards of material will be extracted during that year;

C. A fee of \$250 for each variance requested under section 490-CC, except for the following:

(1) A fee of \$500 for a variance to excavate below the seasonal high water table;

(2) A fee of \$500 for a variance to create an externally drained quarry;

(3) A fee of \$125, for a variance to waive the topsoil salvage requirement;

(4) A fee of \$125 for a variance to waive the monitoring requirements for airblasts and ground vibration; and

D. A fee of \$250 upon filing a notice of intent to expand under this section.

Notwithstanding any other provision of this subsection, the total for all fees paid under paragraphs A and B for one quarry in one calendar year may not exceed \$400.

- F. The department may grant a release from the requirements of this article to the owner or operator or a transferee after reclamation of the affected area as determined by the department. The department shall inspect the site before making this determination. The release will terminate if any further excavation on the parcel is proposed by the owner or operator or a transferee. A person proposing further excavation on the parcel must file a notice of intent to comply pursuant to section 490-Y and comply with all the requirements of this article. Payment of the annual fee under section 490-EE will resume in the year when the further excavation begins.